For: Improvements In Or Relating To Steering Pivots

Preliminary Amdt. dated September 7, 2004 National Phase App. Of PCT/EP03/02072

**Listing of Claims:** 

1. (original) A steering pivot pin providing an integrally formed radially inner

race defining a circumferentially extending inner raceway, and a cage retaining therein

at spaced locations rolling elements which contact the inner raceway, the cage being

retained relative to the pivot by means of a clip connection.

2. (original) A steering pivot as claimed in claim 1 wherein there is also

provided an outer race which defines a circumferentially extending outer raceway which

engages the rolling elements.

3. (currently amended) A steering pivot as claimed in claim 1 or claim 2

wherein the rolling elements are tapered rollers and the inner and outer raceways are

part-conical.

4. (currently amended) A steering pivot as claimed in any one of claims

claim 1 to 3 wherein the clip connection is constituted by resilient radially inward

projections provided at spaced spaced locations around the large end of the cage.

5. (original) A steering pivot as claimed in claim 4 wherein the projections

are received in a circumferential groove in the large outside diameter of the inner race.

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6. (original) A steering pivot as claimed in claim 5 wherein the large axial

end of the inner raceway has a circumferential rib against which the rolling elements

engage and the circumferential groove is provided immediately axially behind the rib.

7. (original) A steering pivot as claimed in claim 6 wherein a seal element is

provided behind the circumferential groove.

8. (currently amended) A steering pivot as claimed in any one of claims

claim 1 to 7 wherein the pivot pin has a flange at its end remote from the narrow end of

the inner race, the flange having a number of holes for facilitating attachment to a

support arm.

9. (currently amended) A steering pivot as claimed in any one of claims

claim 1 to 8 wherein the pivot pin has an axial extension beyond the narrow end of the

inner race, the axial extension being adapted to receive a sensor.

10. (original) A steering pivot as claimed in claim 9 wherein said axial

extension has an axial groove for receiving a sensor.

11. (new) In a steering axle of a vehicle, with the steering axle having

support arms which pivot about a generally upright axis, an improved steering pivot for

enabling one of the arms to pivot about the axis, said pivot comprising:

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a pivot pin fitted into said one arm and having an inner raceway that is oblique to

and is presented away from the axis, the pin also having an annular groove at one end

of the raceway, with the groove opening away from the axis;

an outer raceway located around the inner raceway and being presented toward

the axis and the inner raceway, the outer raceway being inclined with respect to the axis

in the same direction that the inner raceway is inclined;

rolling elements arranged in a row between the inner raceway on the pin and the

outer raceway; and

a cage having projections which project into the annular groove of the pin and

prevent the cage and rolling elements from moving axially off the pivot pin in the

absence of the outer race.

(new) The combination according to claim 11 wherein the raceway has a 12.

large end and a small end, with the large end being located closest to the groove and

the small end being at one end of the pin so that the rolling elements will move axially

away from the groove and off the pivot pin in the absence of the engagement of the

projections on the cage with the groove.

(new) The combination according to claim 12 wherein the cage has 13.

openings and the rolling elements are received in the openings.

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14. (new) The combination according to claim 12 and further comprising an

outer race located around the inner race, the outer raceway being on the outer race.

15. (new) The combination according to claim 12 wherein the rolling elements

are tapered rollers and the raceways are frustoconical.

16. (new) The combination according to claim 12 wherein the projections on

the cage are resilient.

17. (new) The combination according to claim 16 wherein the cage is formed

from a polymer.

18. (new) The combination according to claim 12 wherein the pivot pin is

received in the support arm and has a flange at its end that is remote from the end at

which the inner raceway terminates, with the flange overlying the support arm; and

wherein the pin is secured to the support arm at the flange.

19. (new) The combination according to claim 12 wherein the pivot is one of

two spaced apart pivots, each having its pivot pin fitted to a different support arm, with

the raceways of the pivots being inclined downwardly toward the space between the

pivots.

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